

No. 92-1213

Supreme Court, U.S.
FILED

MAR 24 1993

OFFICE OF THE CLERK

IN THE
Supreme Court of the United States
OCTOBER TERM, 1992

VIRGINIA MILITARY INSTITUTE, *et al.*,
Petitioners,

v.

UNITED STATES OF AMERICA,
Respondent.

**On Petition for Writ of Certiorari to the
United States Court of Appeals
for the Fourth Circuit**

**BRIEF OF MARY BALDWIN COLLEGE,
SAINT MARY'S COLLEGE, AND
SOUTHERN VIRGINIA COLLEGE FOR WOMEN
AS AMICI CURIAE IN SUPPORT OF PETITIONERS**

CAROLYN B. KUHL *
ANDREA M. GAUTHIER
MUNGER, TOLLES & OLSON
355 South Grand Avenue
Thirty-fifth Floor
Los Angeles, California 90071
(213) 683-9100
Counsel for Amici Curiae

March 24, 1993

* Counsel of Record

TABLE OF CONTENTS

	Page
INTEREST OF THE <i>AMICI CURIAE</i>	1
SUMMARY OF ARGUMENT	2
ARGUMENT	2
I. RECENT STUDIES INDICATE THAT SINGLE-SEX EDUCATION PROVIDES SUBSTANTIAL BENEFITS TO WOMEN	2
A. Single-Sex Education's Contribution to Higher Academic Achievement and Self-Esteem in Women	3
1. <i>Single-Sex Education Has A Positive Effect On Performance And Attitudes</i>	3
2. <i>Single-Sex Education Has Been Linked With Greater Academic Achievement</i>	8
B. Single-Sex Education's Role in Encouraging Women to Pursue Male-Dominated Careers..	11
C. Single-Sex Education As a Beneficial Alternative to a Coeducational Environment.....	14
II. THE CURRENT STATE OF THE LAW CASTS DOUBT ON THE CONSTITUTIONAL VALIDITY OF SINGLE-SEX EDUCATION AND THEREFORE THREATENS WOMEN'S COLLEGES	16
CONCLUSION	20

TABLE OF AUTHORITIES

CASES	Page
<i>Bob Jones Univ. v. United States</i> , 461 U.S. 574 (1983)	18
<i>Cooper v. Aaron</i> , 358 U.S. 1 (1955)	17, 18
<i>Lee v. Macon County Board of Education</i> , 267 F. Supp. 458 (M.D. Ala. 1967)	17
<i>Mississippi University for Women v. Hogan</i> , 458 U.S. 718 (1982)	16
<i>Norwood v. Harrison</i> , 413 U.S. 455 (1973)	17
<i>Trustees of Smith College v. Bd. of Assessors</i> , 385 Mass. 767, 434 N.E. 2d 182 (1982)	18, 19, 20
<i>United States v. Hinds County School Bd.</i> , 560 F.2d 619 (5th Cir. 1977)	20
STATUTES	
The Equal Educational Opportunities Act of 1974, 20 U.S.C. § 1701 <i>et seq.</i>	20
OTHER AUTHORITIES	
AMERICAN ASSOCIATION OF UNIVERSITY WOMEN, HOW SCHOOLS SHORTCHANGE GIRLS (1992)	13, 15
AMERICAN ASSOCIATION OF UNIVERSITY WOMEN, SHORTCHANGING GIRLS, SHORTCHANGING AMERICA (1991)	13, 14
A. ASTIN, FOUR CRITICAL YEARS: EFFECTS OF COLLEGE ON BELIEFS, ATTITUDES, AND KNOWLEDGE (1977)	7
A. ASTIN, WHAT MATTERS IN COLLEGE? FOUR CRITICAL YEARS REVISITED (1993)	7
Becker, <i>Differential Treatment of Females and Males in Mathematics Classes</i> , 12 J. RES. MATHEMATICS EDUC. 40 (1981)	13
Bressler & Wendell, <i>The Sex Composition of Selective Colleges and Gender Differences in Career Aspirations</i> , 51 J. HIGHER EDUC. 660 (1980)	11, 12
Constantinople, Cornelius & Gray, <i>The Chilly Climate; Fact or Artifact?</i> , 59 J. HIGHER EDUC. 528 (1988)	15
Dubnoff, <i>Does Gender Equality Always Imply Gender Blindness? The Status Of Single-Sex Education For Women</i> , 86 W. VA. L. REV. 295 (1984)	18, 19

TABLE OF AUTHORITIES—Continued

	Page
Feldblum, Krent & Watkin, <i>Legal Challenges To All-Female Organizations</i> , 21 HARV. C.R.-C.L. L. REV. 171 (1986)	17, 19
Gallagher, <i>Desegregation: The Effect Of The Proposed Equal Rights Amendment On Single-Sex Colleges</i> , 18 ST. LOUIS U.L.J. 41 (1973)	17
Gilbert, Gallessich & Evans, <i>Sex of Faculty Role Model and Students' Self Perceptions of Competency</i> , 9 SEX ROLES 597 (1983)	10
Ginsburg, <i>Sex Discrimination In The IRS: Public Policy and the Charitable Deduction</i> , 10 TAX NOTES 27 (1980)	18
Hall, <i>Classroom Climate for Women: Tip of the Iceberg</i> , 51 A. FOR COM. ADMIN. BULL. 64-67 (1985)	15
R. HALL & B. SANDLER, THE CLASSROOM CLIMATE: A CHILLY ONE FOR WOMEN? PROJECT ON THE STATUS AND EDUCATION OF WOMEN (1992)	15
Heller, Puff & Mills, <i>Assessment of the Chilly College Climate for Women</i> , 56 J. HIGHER EDUC. 446 (1985)	15
Jones, <i>Outcome of Girls' Schooling: Unravelling Some Social Differences</i> , 34 AUSTRALIAN J. EDUC. 153 (1990)	14
Lawrie & Brown, <i>Sex, Stereotypes, School Subject Preferences and Career Aspirations as a Function of Single/Mixed-Sex Schooling and Presence/Absence of an Opposite Sex Sibling</i> , 62 BRIT. J. EDUC. PSYCHOLOGY 132 (1992)	12
Lee & Bryk, <i>Effects of Single-Sex Schools: Response to Marsh</i> , 81 J. EDUC. PSYCHOLOGY 647 (1989)	5
Lee & Bryk, <i>Effects of Single-Sex Secondary Schools on Student Achievements and Attitudes</i> , 78 J. EDUC. PSYCHOLOGY 381 (1986)	3, 4, 13
Lee & Marks, <i>Sustained Effects of the Single-Sex Secondary School Experience on Attitudes, Behaviors, and Values in College</i> , 82 J. EDUC. PSYCHOLOGY 578 (1990)	4, 12, 13

TABLE OF AUTHORITIES—Continued

	Page
Marsh, <i>Effects of Attending Single-Sex and Co-educational High Schools On Achievement, Attitudes, Behaviors and Sex Differences</i> , 81 J. EDUC. PSYCHOLOGY 70 (1989)	5
Miller, <i>The Future Of Private Women's Colleges</i> , 7 HARV. WOMEN'S L.J. 133 (1984)	17, 18, 19
Oates & Williamson, <i>Women's Colleges & Women Achievers</i> , 3 SIGNS: J. WOMEN CULTURE & SOC'Y 795 (1978)	8
Rhode, <i>Association and Assimilations</i> , 81 NW.U.L. REV. 106 (1986)	17
Rice & Hemmings, <i>Women's Colleges and Women Achievers: An Update</i> , 13 SIGNS: J. WOMEN CULTURE & SOC'Y 346 (1988)	9, 10
C. RIORDAN, <i>GIRLS AND BOYS IN SCHOOL: TOGETHER OR SEPARATE?</i> (1990)	2, 3, 5, 6, 13
Riordan, <i>Public and Catholic Schooling: The Effects of Gender Context Policy</i> , 93 AM. J. EDUC. 518 (1985)	5
Rowe, <i>Single-Sex and Mixed-Sex Classes: The Effects of Class Type on Student Achievement, Confidence and Participation in Mathematics</i> , 32 AUSTRALIAN J. EDUC. 180 (1988)	14
Rubinfeld & Gilroy, <i>Relationship Between College Women's Occupational Interests and a Single-Sex Environment</i> , 40 CAREER DEV. Q. 64 (1991)	12
Smith, <i>Women's Colleges and Coed Colleges: Is There A Difference For Women?</i> , 61 J. HIGHER EDUC. 181 (1990)	7
Stoecker & Pascarella, <i>Women's Colleges and Women's Career Attainments Revisited</i> , 62 J. HIGHER EDUC. 394 (1991)	12
Stowe, <i>Should Physics Classes Be Single Sex?</i> , PHYSICS TEACHER, September 1991, at 380	13
Thigpen, <i>The Application of Fourteenth Amendment Norms to Private Colleges and Universities</i> , 11 J.L. & EDUC. 171 (1982)	19

TABLE OF AUTHORITIES—Continued

	Page
Tidball & Kistiakowsky, <i>Baccalaureate Origins of American Scientists and Scholars</i> , 193 SCIENCE 645 (1976)	11
Tidball, <i>Baccalaureate Origins of Entrants into American Medical Schools</i> , 56 J. HIGHER EDUC. 385 (1985)	11
Tidball, <i>Baccalaureate Origins of Recent Natural Science Doctorates</i> , 57 J. HIGHER EDUC. 606 (1986)	11
Tidball, <i>Perspective On Academic Women and Affirmative Action</i> , 54 EDUC. REC. 130 (1973)	8, 10
Tidball, <i>Women's Colleges and Women Achievers Revisited</i> , 5 SIGNS: J. WOMEN CULTURE & SOC'Y 546 (1988)	9
Trice, <i>Advantages of the Women's College: What Research Has To Tell Us</i> , MARY BALDWIN MAG., April 1991, at 10	10
Williams, <i>Is The Post-Secondary Classroom a Chilly One for Women? A Review of the Literature</i> , 23 CANADIAN J. HIGHER EDUC. 29 (1990) ..	15

**BRIEF OF MARY BALDWIN COLLEGE,
SAINT MARY'S COLLEGE, AND
SOUTHERN VIRGINIA COLLEGE FOR WOMEN
AS *AMICI CURIAE* IN SUPPORT OF PETITIONERS**

INTEREST OF THE *AMICI CURIAE*

Mary Baldwin College is a private four-year liberal arts college for women in Staunton, Virginia. The college is committed to academic excellence and to the education of women in a time of expanding opportunities. Educational programs at the college are designed to provide the foundation for future careers and positions of leadership.

Saint Mary's College is a private two-year liberal arts college and upper level preparatory school for women in Raleigh, North Carolina. The college is dedicated to developing women's confidence and leadership skills, and preparing women for continued study toward a baccalaureate degree and future professional careers, and for lives in which they can be confident, adventurous, productive and fulfilled through their choices. The college offers a traditional liberal arts program.

Southern Virginia College for Women is a private two-year college for women in Buena Vista, Virginia. It is committed to preparing its students for continued study towards a baccalaureate degree, providing its students with career-oriented programs, and creating opportunities for each student to grow and learn in a supportive atmosphere that encourages the development of academic skills and self-confidence.

Amici are dedicated to single-sex education. As private women's colleges, they can attest that a single-sex environment offers women significant advantages that are unobtainable in a coeducational setting. *Amici* are concerned that the Fourth Circuit's decision in this case raises troubling constitutional issues that ultimately could threaten the viability of single-sex education for women.

SUMMARY OF ARGUMENT

Recent studies strongly suggest that single-sex education for women at the secondary and post-secondary level promotes women's academic and career achievement and encourages women to pursue traditionally male-dominated careers. In an era of educational crisis this country cannot afford to abandon successful educational programs such as those offered by the *amici*.

The current state of the law, including the opinion of the Fourth Circuit in this case, casts doubt on the constitutional validity of single-sex education for women. Women's colleges cannot continue to exist if the legal system refuses to recognize the legitimacy of the benefits of single-sex education for women. This Court should grant the petition for writ of *certiorari* in this case and uphold the constitutionality of single-sex education for women before the current legal uncertainty becomes a tool to eliminate institutions such as the *amici*.

ARGUMENT

I. RECENT STUDIES INDICATE THAT SINGLE-SEX EDUCATION PROVIDES SUBSTANTIAL BENEFITS TO WOMEN

Since the 1960's and 1970's the number of women's colleges in the United States has dwindled. In 1960, there were 268 women's colleges in the United States. C. RIORDAN, *GIRLS AND BOYS IN SCHOOL: TOGETHER OR SEPARATE?* 37 (1990). Today, there are only about 56. Pet. App. 52a.

Although this movement away from single-sex education evolved from a variety of economic and societal concerns, those women's colleges that remain have not stood still in the past. The women's colleges of today do not perpetuate outmoded, stereotypical views of women. On the contrary, these colleges play a significant role in the education and development of highly successful

women, many of whom go on to pursue male-dominated careers.

An impressive body of recent studies on single-sex and mixed-sex education at both pre-college and college levels confirms the continued importance of these institutions in American education today. These studies demonstrate that single-sex schools lead to higher achievement and self-esteem in women, encourage women to pursue traditionally male-dominated careers, and alleviate some of the disadvantages women may suffer in a coeducational setting.

A. Single-Sex Education's Contribution to Higher Academic Achievement and Self-Esteem in Women

1. Single-Sex Education Has A Positive Effect On Performance And Attitudes

Recent studies analyzing questionnaire, performance test or school record data strongly suggest that, at both the secondary and college levels, women in single-sex schools not only outperform their peers in mixed-sex schools, but show higher levels of self-esteem and a greater sense of personal control.

In one of the most frequently cited of these studies, Professors Valerie Lee and Anthony Bryk compared the effects of single-sex and mixed-sex Catholic secondary schools on a number of specific variables, including areas of academic achievement, achievement gains, educational aspirations, self-image, sense of personal control over environment, and attitudes and behaviors related to academics.¹ See Lee & Bryk, *Effects of Single-Sex Secondary*

¹ Because of the scarcity of single-sex public schools in this country, several of the studies comparing single-sex and mixed-sex secondary schools have used data from private Catholic schools. For a discussion of the formal and informal structure of these Catholic schools, see C. RIORDAN, *GIRLS AND BOYS IN SCHOOL: TOGETHER OR SEPARATE?* 62-81 (1990).

Schools on Student Achievements and Attitudes, 78 J. EDUC. PSYCHOLOGY 381 (1986) (hereinafter "Lee & Bryk (1986)"). Analyzing data from a longitudinal study of randomly-selected high school sophomores and seniors entitled "High School and Beyond," Professors Lee and Bryk "found that single-sex schools appear to deliver specific advantages to their students." *Id.* at 394. Relative to their peers in the coeducational schools, girls from the single-sex schools were more likely to "express specific interests in both mathematics and English," *id.* at 387, demonstrated "significantly greater gains in reading, science, and educational ambition over the course of their high school years," *id.* at 394, and had higher ratings for self-image and sense of personal control, *id.* at 386.

Professors Lee and Bryk attributed these positive results to the absence of distractions and pressures caused by members of the opposite sex:

[S]ingle-sex secondary schooling may in fact serve to sensitize young women to their occupational and societal potentials in an atmosphere free of some of the social pressures that female adolescents experience in the presence of the opposite sex. Adolescence is a critical period for the formation of attitudes about oneself. It may be that some separation of students' academic and social environments removes the distractions that can interfere with the academic development of some students.

Id. at 394. A follow-up study based on additional data obtained in the second and fourth years after graduation demonstrated that the beneficial effects of single-sex high school experience persisted into the college years. See Lee & Marks, *Sustained Effects of the Single-Sex Secondary School Experience on Attitudes, Behaviors, and Values in College*, 82 J. EDUC. PSYCHOLOGY 578 (190) (hereinafter "Lee & Marks").²

² Although most of the studies analyzing the "High School and Beyond" data have found significant advantages for single-sex

The work of Cornelius Riordan, an Associate Professor of Sociology at Providence College, supports these findings. Professor Riordan has conducted three recent studies on single-sex education which have culminated in a recently published book, *GIRLS AND BOYS IN SCHOOL: TOGETHER OR SEPARATE?* (1990) (hereinafter "RIORDAN (1990)"). In the first of these studies, Professor Riordan analyzed data from the High School and Beyond survey to examine the influence of single-sex and mixed-sex Catholic school education on advanced mathematics, writing, science, civics, self-esteem, and sense of personal control. *Id.* at 82-113. The results significantly favored the single-sex schools. On average, girls in the single-sex schools "score[d] about one-third of a grade equivalent higher than girls in mixed-sex schools," scoring "almost one full year" higher in science. *Id.* at 112. Girls in the single-sex category also scored higher on measures of self-esteem and personal control than did the girls in the mixed-sex category. *Id.* at 109-10.³

schools, one study found no significant effects due to a single-sex education. See Marsh, *Effects of Attending Single-Sex and Co-educational High Schools On Achievement, Attitudes, Behaviors and Sex Differences*, 81 J. EDUC. PSYCHOLOGY 70 (1989). Professors Lee and Bryk have criticized this study on methodological grounds. See Lee & Bryk, *Effects of Single-Sex Schools: Response to Marsh*, 81 J. EDUC. PSYCHOLOGY 647 (1989).

³ The results of Professor Riordan's 1990 study are consistent with an earlier study in which he compared the effects of single-sex Catholic, mixed-sex Catholic, and mixed-sex public schools. See Riordan, *Public and Catholic Schooling: The Effects of Gender Context Policy*, 93 AM. J. EDUC. 518 (1985). Although Riordan found virtually no difference between the mixed-sex Catholic and mixed-sex public schools, the performance of students from the Catholic single-sex schools was significantly greater than the performance of students from the mixed-sex schools. Riordan concluded that "[o]n average, Catholic single-sex schools are nearly twice as effective as Catholic mixed-sex schools" and attributed this difference to the "reduced adolescent subculture" and the "greater availability of same-sex role models" found in the single-sex schools. *Id.* at 536.

In the second of his three studies, Professor Riordan investigated the long-term outcomes of single-sex education. *Id.* at 114-15, 129-34. This study analyzed questionnaire and performance test data from the National Longitudinal Study of the High School Class of 1972, a survey that recorded performance test and questionnaire data from high school seniors in the year 1972, and collected additional data from those same students for the years 1973, 1974, 1976, 1979 and 1986. Professor Riordan concluded that the beneficial effects of single-sex education on cognitive ability persist as many as seven years after graduation from high school. *Id.* at 134. In addition, the girls from the single-sex high schools "achieved higher education than their female counterparts from mixed-sex high schools." *Id.* at 134.

Professor Riordan's work also demonstrates that the benefits of single-sex education are not limited to the secondary school level. In the third of his three recent studies, he used the National Longitudinal Study of the Class of 1972 to compare data from women who had attended single-sex colleges with data from women who had attended mixed-sex colleges. *Id.* at 116-28, 133-34. The study found that "women's colleges have a very strong influence on both educational and occupational achievement." *Id.* at 133.

In analyzing the results of his extensive research, Professor Riordan has concluded that

[S]ingle-sex schools offer an environment that is more conducive to learning than mixed-sex schools, especially for women. They provide more role models for students, and they offer more order and control than mixed-sex schools. In all-girls schools, the adolescent climate is weak, allowing an academic climate to flourish.

Id. at 151.

Professor Riordan's results are consistent with a recent study by Daryl G. Smith, a Professor of Education

and Psychology at the Claremont Graduate School. See Smith, *Women's Colleges and Coed Colleges: Is There A Difference For Women?*, 61 J. HIGHER EDUC. 181 (1990). Analyzing data from students enrolled in single-sex and coeducational colleges in 1982 and questioned four years later, Professor Smith found that "women's colleges relate positively to a variety of measures of student satisfaction, perceived changes in skills and abilities, and educational aspirations and educational attainment." *Id.* at 191. Significantly, students from the women's colleges were more likely to obtain a degree from their institutions than their counterparts at the coeducational colleges. *Id.* at 191-92. Students from the women's colleges also gave high ratings to measures "having to do with the academic program of the institution and the contact with faculty and administration, as well as perceived changes in values of tolerance and cultural awareness." *Id.* at 191. The only area where students from coeducational schools rated their experience more positively than did students from the women's colleges was in the area of social life.⁴ *Id.* at 192.

⁴ Professor Smith analogized his findings to those of Professor Alexander Astin in *FOUR CRITICAL YEARS: EFFECTS OF COLLEGE ON BELIEFS, ATTITUDES, AND KNOWLEDGE* (1977). *FOUR CRITICAL YEARS* was a comprehensive study of educational environments that, like Smith's study, concluded that the single-sex environment produced significant advantages for its students. In a more recent study, Professor Astin has suggested that "institutional type, as such, has little direct effect on student development." See A. ASTIN, *WHAT MATTERS IN COLLEGE? FOUR CRITICAL YEARS REVISITED* 323 (1993). Nevertheless, Astin still found that attending a women's college was positively associated with numerous factors including baccalaureate completion, satisfaction with faculty and overall quality of instruction, leadership measures, writing skills, analytical and problem-solving skills and critical thinking ability. *Id.* at 324. Most of these positive effects were "directly attributable to attending a women's college" and could not "be entirely explained or accounted for on the basis of other characteristics, such as small size, residential emphasis, and private control." *Id.* at 325.

Regardless of whether the positive effects identified in these studies are due to a weakened "adolescent climate," the presence of female role models, or other factors, the studies support the view that, at least during the critical developmental years that occur in late adolescence through college, some women benefit from a single-sex education.

2. Single-Sex Education Has Been Linked With Greater Career Achievement

In addition to those studies that measure achievement through questionnaire data, performance tests, and school records, there are also studies suggesting that women graduates of single-sex colleges are more likely than their peers at coeducational institutions to have been recognized for their career achievement.

In the first of these studies, Professor Elizabeth Tidball of George Washington University Medical Center analyzed a sample of randomly-selected women cited in "Who's Who of American Women." See Tidball, *Perspective On Academic Women and Affirmative Action*, 54 EDUC. REC. 130 (1973) (hereinafter "Tidball (1973)"). She concluded that, relative to the total number of their women graduates, the women's colleges produced a higher proportion of "achievers" than did the coeducational colleges. *Id.* at 132.

Some later studies have criticized the Tidball study on the ground that a disproportionate number of the "achievers" who had graduated during the years under study (1910 through 1940) were from the highly selective Seven Sisters Colleges (Barnard, Bryn Mawr, Radcliffe, Mount Holyoke, Smith, Vassar, and Wellesley).⁵

⁵ One study, for example, has suggested that many of the women who attended these highly selective colleges would have attended the Ivy League colleges had they been open to women during the years in question. See, e.g., Oates & Williamson, *Women's Colleges and Women Achievers*, 3 SIGNS: J. WOMEN CULTURE & SOC'Y 795, 803 (1978).

Notwithstanding these criticisms, more recent studies have suggested that women's colleges may, in fact, play an important role in producing successful graduates. In one such study, Professor Tidball reanalyzed her own data and found that, relative to the total number of women graduates, "highly selective women's colleges were twice as likely to have produced achievers as were the highly selective coeducational colleges." See Tidball, *Women's Colleges and Women Achievers Revisited*, 5 SIGNS: J. WOMEN CULTURE & SOC'Y 504, 512 (1980). "Similarly, all other women's colleges were twice as likely to have produced achievers as were all other coeducational colleges." *Id.*

An even more recent study partially replicated Professor Tidball's results using data from women achievers who had graduated in more recent decades. Rice & Hemmings, *Women's Colleges and Women Achievers: An Update*, 13 SIGNS: J. WOMEN CULTURE & SOC'Y 546 (1988) (hereinafter "Rice & Hemmings"). The study's purpose, in part, was to investigate whether "the tumultuous decade of women's college closings has had an effect on the number of women achievers who have graduated from women's colleges, as compared to coeducational institutions." *Id.* at 552. Although the results were not statistically significant, the study found that in proportion to the total number of women graduates women's colleges had one and one-half as many graduates who were achievers as did the coeducational colleges during the decade of the 1970's. *Id.* at 556.⁶

The success of women's colleges in producing a high rate of women achievers has been the subject of much discussion. Professor Tidball attributed her results to the

⁶ Although some commentators have questioned whether being listed in "Who's Who of American Woman" is the most reliable measure of career success, Rice and Hemmings have observed that the publication "provides a readily available compilation of women who have achieved career accomplishments in a broad range of fields." Rice & Hemmings, 552.

prevalence of female faculty role models and mentors at women's colleges. She found that, for both single-sex and coeducational colleges, the number of "career-successful women graduates" increased as the ratio of women faculty members to women students increased. Tidball (1973), 135. Other researchers have similarly concluded that "[t]here seems little question that an environment in which many women teachers and mentors provide traditional and nontraditional examples of achievement is an advantage to young women." Rice & Hemmings, 558.⁷

The presence of female mentors and role models may not be the sole explanation for the beneficial effect of women's colleges. After conducting his own review of the literature, Professor Ashton Trice of Mary Baldwin College has recently concluded that "the best interpretation of these studies is that special advantages accumulate for women educated at *academically rigorous* women's colleges." Trice, *Advantages of the Women's College: What Research Has To Tell Us*, MARY BALDWIN MAG., April 1991, at 10, 12 (emphasis in original). In addition to the prevalence of women role models, these special advantages may include a greater attention to women's development in mathematics and science, greater opportunities to assume leadership roles, and a more relaxed atmosphere due to the absence of men. *Id.* at 13-14.

While it may be difficult to isolate the specific reasons why women's colleges have been successful in producing a high rate of women achievers, these studies indicate that women's colleges offer significant advantages over coeducational institutions.

⁷ Other types of studies support the importance of same-sex role models. One study has found that "[f]emale graduate students identifying female professors as role models viewed themselves as more career oriented, confident, and instrumental than did female students identifying male role models." See Gilbert, Gallessich & Evans, *Sex of Faculty Role Model and Students' Self Perceptions of Competency*, 9 SEX ROLES 597, 604 (1983).

B. Single-Sex Education's Role in Encouraging Women to Pursue Male-Dominated Careers

A diverse body of literature suggests that women attending single-sex schools may be even more likely than their peers at coeducational schools to pursue male-dominated careers.

Following her pioneering study on women achievers in 1973, Professor Tidball performed three additional studies to examine the baccalaureate origins of scientists and scholars, men and women entering medical school, and men and women with natural science doctorates. See Tidball & Kistiakowsky, *Baccalaureate Origins of American Scientists and Scholars*, 198 SCIENCE 645 (1976); Tidball, *Baccalaureate Origins of Entrants into American Medical Schools*, 56 J. HIGHER EDUC. 385 (1985); Tidball, *Baccalaureate Origins of Recent Natural Science Doctorates*, 57 J. HIGHER EDUC. 606 (1986). In each of these studies, Professor Tidball found that, relative to the total number of women graduates, the women's colleges produced a significantly higher proportion of graduates in these fields of study than did coeducational colleges.

In yet another study, Professor of Sociology Marvin Bressler of Princeton University and his colleague Peter Wendell explored the impact of single-sex and mixed-sex colleges on career aspirations. See Bressler & Wendell, *The Sex Composition of Selective Colleges and Gender Differences In Career Aspirations*, 51 J. HIGHER EDUC. 660 (1980). Analyzing responses to a national survey of male and female undergraduates enrolled in single-sex and coeducational colleges, the study concluded that between freshman and senior year, there was a significant increase in the number of women from single-sex colleges who intended to pursue more "masculine" vocations. *Id.* at 660. The greatest effect was found in the number of women who intended to become college professors or lawyers.⁸ *Id.* In contrast, the coeducational colleges had "no

⁸ Among the other "masculine" professions included in the study were physician, accountant, business executive, business owner, engineer, scientific researcher, and religious occupations.

appreciable demonstrable influence on the career ambitions of either sex." *Id.* at 662. Based on these results, the researchers suggested that "sexual parity in the occupational domain might be better served if larger numbers of young women were to enroll in single-sex colleges." *Id.*⁹

An even more recent study analyzing questionnaire data from college women has suggested that single-sex education along with family structure plays an important role in influencing career choice. See Rubenfield & Gilroy, *Relationship Between College Women's Occupational Interest and a Single-Sex Environment*, 40 CAREER DEV. Q. 64 (1991). The study found that college women who had attended single-sex high schools and had brothers were more likely to choose nontraditional careers compared to their peers who had attended mixed-sex high schools, regardless of sibling gender. The study suggests that, although there are numerous factors that might affect a woman's career choice, "the opportunity to interact in a single-sex environment is important at some stage of a young woman's life, if she is to develop nontraditional interests." *Id.* at 70.¹⁰

⁹ Lee and Marks similarly found that women who attended single-sex secondary schools were more likely than their peers from mixed-sex schools to consider application to law school. See Lee & Marks, 586. While not all studies have reported these significant effects on career choice, see, e.g., Stoecker & Pascarella, *Women's Colleges and Women's Career Attainments Revisited*, 62 J. HIGHER EDUC. 394 (1991), the great weight of the research is in favor of women's colleges.

¹⁰ A recent British study of secondary school students has concluded that, whether at home or at school, "increased contact" with the opposite sex has not led to a "breakdown in sex stereotypical attitudes but, if anything, the reverse." *Id.* at 138. See Lawrie & Brown, *Sex Stereotypes, School Subject Preferences and Career Aspirations as a Function of Single/Mixed-Sex Schooling and Presence/Absence of an Opposite Sex Sibling*, 62 BRIT. J. EDUC. PSYCHOLOGY 132 (1992). The study suggested that girls "in sexually homogeneous environments" might have "some slight advantage over their peers in more heterogenous settings." *Id.* at 138.

These studies on career choice are consistent with other studies demonstrating that women who attend single-sex colleges or high schools have less stereotypical views about gender roles than do women attending coeducational schools. Professor Lee and her colleagues have shown that women who attend single-sex high schools or single-sex colleges have less stereotypical views about the compatibility of work and motherhood, and the traditional role of men as achievers. Lee & Bryk (1986), 389; Lee & Marks, 584-85. Similarly, Professor Riordan demonstrated that women graduates of single-sex colleges and high schools hold "more liberal attitudes toward working women" and "much stronger views toward equal sex roles" than their peers at single-sex schools. See RIORDAN (1990), 110, 133-134.

Yet another body of research has indicated that single-sex education may have a positive effect on women's participation and interest in the traditionally male-dominated fields of mathematics and science.¹¹ One study, for example, concluded that single-sex high school physics classes had a "statistically significant, positive influence upon girls' interest in physics-related careers, while mixed-sex classes may have had a slight negative influence." Stowe, *Should Physics Classes Be Single Sex?*, PHYSICS TEACHER, September, 1991, at 380.

A similar study of single-sex classes in post-primary schools in Australia concluded that "students in single-sex classes indicated significantly higher gains in confidence over time than those in mixed-sex classes" and

¹¹ A substantial number of studies have shown that girls generally participate less, receive less teacher attention, and show less interest and confidence than do boys in the subjects of mathematics and science. See, e.g., AMERICAN ASSOCIATION OF UNIVERSITY WOMEN, *HOW SCHOOLS SHORTCHANGE GIRLS* 24-30 (1992); AMERICAN ASSOCIATION OF UNIVERSITY WOMEN, *SHORTCHANGING GIRLS, SHORTCHANGING AMERICA* 12-14 (1991); Becker, *Differential Treatment of Females and Males in Mathematics Classes* 12 J. RES. MATHEMATICS EDUC. 40 (1981).

that this confidence "significantly increased the likelihood" of "subsequent participation" in mathematics. Rowe, *Single-Sex and Mixed-Sex Classes: The Effects of Class Type on Student Achievement, Confidence and Participation in Mathematics*, 32 AUSTRALIAN J. EDUC. 180, 195-96 (1988).¹² These findings may be of critical importance given a recent study indicating that adolescents who like math and science "express stronger desires for careers as teachers, doctors and scientists" and "are more likely to aspire to careers as professionals." AMERICAN ASSOCIATION OF UNIVERSITY WOMEN, SHORTCHANGING GIRLS, SHORTCHANGING AMERICA 15 (1991).

Viewed as a whole, these studies demonstrate that there may be a significant link between single-sex education and nontraditional career choice. If greater equality between the sexes is one of the goals of education today, single-sex schools may be a valuable tool in accomplishing this end.

C. Single-Sex Education As a Beneficial Alternative to a Coeducational Environment

The studies that demonstrate the benefits of single-sex education in terms of academic achievement, self-esteem and career choice are consistent with a related body of research indicating that some women may suffer disadvantages in a coeducational setting. This related body of research may explain, in part, why some women perform better in a single-sex setting. It also offers an additional reason why single-sex education should be preserved as an option to coeducation.

In a recently published study commissioned by the American Association of University Women, researchers

¹² Another study has similarly concluded that single-sex education, although not a sole-factor, is a "contributory factor . . . for ensuring that girls continue in mathematics and science." Jones, *Outcome of Girls' Schooling: Unravelling Some Social Differences*, 34 AUSTRALIAN J. EDUC. 153, 161 (1990).

at the Wellesley College Center for Research on Women concluded that "[t]here is clear evidence that the educational system is not meeting girls' needs." AMERICAN ASSOCIATION OF UNIVERSITY WOMEN, HOW SCHOOLS SHORTCHANGE GIRLS 2 (1992). Although "[g]irls and boys enter school roughly equal in measured ability . . . [t]welve years later, girls have fallen behind their male classmates in key areas such as higher-level mathematics and measures of self-esteem." *Id.* Among the study's findings were that girls participate less and receive less teacher attention and encouragement than do boys, and are discouraged from pursuing careers in science. *Id.* at 28, 68-69.

Several studies have reported that women suffer similar disadvantages at the college level. See, e.g., R. HALL & B. SANDLER, THE CLASSROOM CLIMATE: A CHILLY ONE FOR WOMEN? PROJECT ON THE STATUS AND EDUCATION OF WOMEN (1982); Hall, *Classroom Climate for Women: Tip of the Iceberg*, 51 A. FOR COM. ADMIN. BULL. 64 (1985). A recent review of this literature has concluded that the women's lack of participation might be due to the "lack of female role models and gender biased classroom behavior on the part of the professors." Williams, *Is The Post-Secondary Classroom a Chilly One for Women? A Review of the Literature*, 23 CANADIAN J. HIGHER EDUC. 29, 40 (1990).

Although some studies have challenged the view that coeducational college classrooms present a "chilly climate" for women,¹³ the fact that the issue has been the subject of controversy is testimony to the need for continued experimentation on the relative values of single-sex and mixed-sex education.

¹³ See, e.g., Heller, Puff & Mills, *Assessment of the Chilly College Climate for Women*, 56 J. HIGHER EDUC. 446 (1985); Constantinople, Cornelius & Gray, *The Chilly Climate: Fact or Artifact?*, 59 J. HIGHER EDUC. 527 (1988).

II. THE CURRENT STATE OF THE LAW CASTS DOUBT ON THE CONSTITUTIONAL VALIDITY OF SINGLE-SEX EDUCATION AND THEREFORE THREATENS WOMEN'S COLLEGES

The implications for women's colleges of the Fourth Circuit's decision in this case are uncertain but potentially very troubling. Although the court of appeals purported to recognize "that single-sex education is pedagogically justifiable" (Pet. App. 17a), it nevertheless held that the school could not continue to exist as a single-sex institution unless an *identical* program for the other sex was provided.

As discussed above, a substantial body of literature demonstrates that women can benefit from a pre-professional school education that is separate from, and in some respects different from, a coeducational institution. This literature is not based on outmoded stereotypes about the "proper" roles of men and women. To the contrary, it suggests that through single-sex education women achieve enhanced performance in careers and particularly in male-dominated careers. Women should not be denied these educational benefits if men do not benefit from or choose to attend identical institutions, or if government support for identical male-only institutions is not equal to the support given women's institutions.

The decision of the court below only enhances the doubt about the legal viability of single-sex education for women engendered by this Court's decision in *Mississippi University for Women v. Hogan*, 458 U.S. 718 (1982). Even though the Court did not purport in that case to decide that single-sex education never can be justified, the majority's failure to acknowledge any benefits to women from single-sex education leaves uncertain the Court's willingness to consider those benefits.¹⁴ As one commenta-

¹⁴ As indicated by the discussion in the preceding sections of this brief, studies published subsequent to the decision in *Hogan* provide even more solid support for the benefits of single-sex education for women than the studies available at the time of the *Hogan* decision.

tor has stated: "Given the uncertain scope and symbolic significance of its holding, the majority's cursory evaluation of the merits of single-sex education remains troubling." Rhode, *Association and Assimilation*, 81 Nw.U.L. REV. 106, 140 (1986).

Although *amici* all are private women's colleges, the uncertain constitutional status of single-sex education threatens these institutions. Several commentators have concluded that courts probably "will reach the conclusion that government may not provide direct financial support to institutions which practice discrimination prohibited to government by constitutional standards of equality." Gallagher, *Desegregation: The Effect Of The Proposed Equal Rights Amendment On Single-Sex Colleges*, 18 ST. LOUIS.U.L.J. 41, 67 (1973). See Feldblum, Krent & Watkin, *Legal Challenges To All-Female Organizations*, 21 HARV.C.R.-C.L. L.REV. 171, 196 (1986) (hereinafter "Feldblum") (discussing strategies for suit against a government official who disbursed funds to a single-sex organization that received the funds "and discriminated on the basis of sex in that program"); Miller, *The Future Of Private Women's Colleges*, 7 HARV.WOMEN'S L.J. 153, 158-161 (1984) (hereinafter "Miller") (discussing the availability of a challenge to Title IX funding of single-sex schools). The commentators find support for this conclusion in the Supreme Court's decision in *Norwood v. Harrison*, 413 U.S. 455 (1973):

Racial discrimination in state-operated schools is barred by the Constitution and "[i]t is also axiomatic that a state may not induce, encourage or promote private persons to accomplish what it is constitutionally forbidden to accomplish." *Lee v. Macon County Board of Education*, 267 F. Supp. 458, 475-476 (M.D. Ala. 1967).

Id. at 465.¹⁵

¹⁵ See also *Cooper v. Aaron*, 358 U.S. 1, 19 (1958):

[S]tate support of segregated schools through any arrangement, management, funds or property cannot be squared with the

. Commentators also have postulated the threat of a cut-off of tax exemptions for private single-sex schools. "Should the Supreme Court rule as it has done with respect to race that separation by sex in education is inherently unequal, the IRS would not only be justified in denying tax exempt status to private schools with sex-restrictive admissions policies but it might well be forced to do so." Dubnoff, *Does Gender Equality Always Imply Gender Blindness? The Status Of Single-Sex Education For Women*, 86 W. VA. L. REV. 295, 310 (1984) (hereinafter "Dubnoff") (analyzing the implications of *Bob Jones Univ. v. United States*, 461 U.S. 574 (1983), for single-sex schools' tax exemptions). See also Miller, 163-165. While the Fourth Circuit's opinion in this case does not go so far as to hold that separation by sex is inherently unequal, it takes a significant step in that direction by apparently banning single-sex institutions for which a mirror image version of the institution does not exist for the other sex.

The threat of a challenge to a private single-sex college's tax-exempt status is not an idle one.¹⁶ State tax assessors sought to challenge Smith College's tax exemption on the ground that the women's college "was not entitled to an exemption because it engaged in sex discrimination in violation of Federal and State law." *Trus-*

[Fourteenth] Amendment's command that no state shall deny to any person within its jurisdiction the equal protection of the laws.

¹⁶ A 1977 IRS letter ruling concluded that a donor's limitation of scholarships to male donees "is not a bar to charitable deduction . . . [because] classification based on sex is not against declared Federal public policy and is educationally and socially beneficial to the community at large." IRS Letter Ruling (Technical Advice Memorandum) 7744007 (1977). This ruling, however, has been severely criticized as "flagrantly disregard[ing] or misconstru[ing] pertinent federal judicial and legislative pronouncements" Ginsburg, *Sex Discrimination In The IRS: Public Policy and the Charitable Deduction*, 10 TAX NOTES 27 (1980).

tees of Smith College v. Bd. of Assessors, 385 Mass. 767, 768, 434 N.E. 2d 182 (1982).¹⁷

Potential direct challenges to the existence of private, single-sex colleges have been discussed by commentators as well.¹⁸ But a challenge to the funding or tax-exempt status of a women's college is itself likely to threaten the existence of the school. "Since most private colleges and universities receive financial support from the government and benefit greatly from tax exempt status, the threat of withdrawal of these privileges along with the likely ineligibility of students to receive government assistance means that these institutions must in practice comply with constitutional restrictions." Dubnoff, 298.

Currently there are approximately 56 women's colleges enrolling about 64,000 students and only eleven men's colleges enrolling about 11,000 students. Pet. App. 52a. None of these women's colleges is in a position to provide an equivalent education for men or to assure that the government equally supports identical all-male institutions. Moreover as a practical as well as a legal matter these women's colleges cannot continue to function if the legal system refuses to recognize the legitimacy

¹⁷ The Massachusetts Supreme Judicial Court did not reach the merits, as it held that the tax assessors were not vested with authority to raise the constitutional challenge.

¹⁸ See, e.g., Thigpen, *The Application of Fourteenth Amendment Norms to Private Colleges and Universities*, 11 J.L. & EDUC. 171, 195, 205 (1982) (suggesting that courts may decline to enforce the decisions of educational institutions unless they conform to constitutional standards and reviewing the arguments of "numerous commentators . . . for application of equitable principles to private institutions of higher learning"); Feldblum, 199 (even though "under current doctrine most private organizations are unlikely to be found to be 'state actors,' " "creative litigation" strategies may expand cases where state action is found); Miller, 158 (noting that despite the current scope of the state action doctrine, "[c]ivil rights advocates continue to demand that private institutions adhere to basic norms of fair and equal treatment").

of the benefits of single-sex education for women. The uncertainty of the current state of the law encourages the sort of legal challenges attempted in the *Smith* case. Even if unsuccessful, such legal challenges strain the resources of private institutions. In addition, public officials may be affected in their legislative judgments by the courts' failure to affirm the constitutional validity of single-sex education for women.¹⁹

This country faces an educational crisis. Studies strongly suggest that single-sex education for women furthers the academic and career achievements of women. This country cannot afford to cut off even potentially effective educational programs. This Court should speak to uphold the constitutionality of single-sex education for women before legal uncertainty becomes a tool to eliminate those institutions.

CONCLUSION

For the foregoing reasons, the petition for certiorari should be granted.

Respectfully submitted,

CAROLYN B. KUHLM *
 ANDREA M. GAUTHIER
 MUNGER, TOLLES & OLSON
 355 South Grand Avenue
 Thirty-fifth Floor
 Los Angeles, California 90071
 (213) 683-9100
Counsel for Amici Curiae

March 24, 1993

* Counsel of Record

¹⁹ The Equal Educational Opportunities Act of 1974, 20 U.S.C. §§ 1701, 1703(c), has been held to prohibit assignment of pupils to public single-sex schools. *United States v. Hinds County School Bd.*, 560 F.2d 619 (5th Cir. 1977).